

## — Tumor Markers

Tumor markers are substances, often proteins, which are produced by the cancer tissue itself or sometimes by the body in response to a cancer growth. Because some of these substances can be detected in body samples such as blood, urine, and tissue, these markers may be used, along with other tests and procedures, to help detect and diagnose some types of cancer, predict and monitor a person's response to certain treatments, and detect recurrence.

Newer types of tests have been developed that look for changes in genetic material (DNA, RNA), rather than proteins, in patient samples. The genetic changes have been found to be associated with certain cancers and can be used as tumor markers to help determine prognosis, guide targeted treatment, and/or detect cancers early on.

While tumor marker tests can provide very useful information, they do have limitations. Many tumor markers may also be elevated in persons with diseases other than cancer. Some tumor markers are specific for a particular type of cancer, while others are seen in several different types of cancer.

Not every person with a particular type of cancer will have an elevated level of the corresponding tumor marker and not every cancer has a tumor marker that has been identified as associated with it. Tumor markers alone are not diagnostic for cancer; for some types of cancer, they provide additional information that can be considered in conjunction with a patient's medical history and physical exam as well as other laboratory and/or imaging tests.

### Cancer Treatment Response Indicators

Monitor success of treatment and detect recurrence. Tumor markers can be used to monitor the effectiveness of treatment, especially in advanced cancers. If the marker level drops, the treatment is working; if it stays elevated, adjustments are needed. (The information must be used with care, however, since other conditions can sometimes cause tumor markers to rise or fall.) One of the most important uses for tumor markers, along with guiding treatment, is to monitor for cancer recurrence. If a tumor marker is elevated before treatment, low after treatment, and then begins to rise over time, then it is likely that the cancer is returning. (If it remains elevated after surgery, then chances are that not all of the cancer was removed.)

CEA  
(ng/mL)

<2.0

Range: SEE NOTE:

#### CEA

(ng/mL)

The CEA test measures the level of carcinoembryonic antigen (CEA) in the blood. CEA is a protein normally found in the tissue of a developing baby in the womb. The blood level of this protein disappears or becomes very low after birth. In adults, an abnormal level of CEA may be a sign of cancer.

#### Result Comments

Reference Range:

Non-Smoker: <2.5

Smoker: <5.0

This test was performed using the Siemens chemiluminescent method. Values obtained from different assay methods cannot be used interchangeably. CEA levels, regardless of value, should not be interpreted as absolute evidence of the presence or absence of disease.